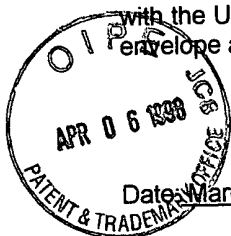


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Date: March 30, 1998

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2730R-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Curtis R. Scharf et al.

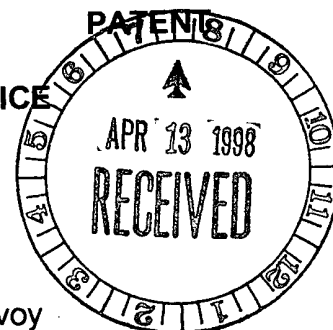
Serial No.: 08/888,462

Filed: July 7, 1997

For: LUBRICATING COMPOSITIONS

Group No.: 1721

Examiner: E. McAvoy



Response

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This paper is responsive to the Office Action mailed September 29, 1998, for which a three month period of response is given. A petition and fee for a three month extension of time accompanies this response. With March 29 being Sunday, this paper is considered timely filed with the extension of time. Reconsideration is respectfully requested.

To further prosecution, Applicants are considering test data to submit in support of their claims. Applicants respectfully request the Examiner to call the undersigned prior to issuance of any Final rejection.

Claims 1-26 are pending in the application.

Claims 1-26 stand rejected under 35 U.S.C. § 103 as being obvious over Tipton et al (U. S. Patent 4,594,378). The rejection states that Tipton et al teaches polymeric compositions which have improved shear stability in transmission and hydraulic fluids while maintaining high and low temperature viscosity characteristics. The rejection states that Tipton teaches a mixture of (A) at least one oil-soluble polymer, which can be a homopolymer of C₃₋₂₀ olefins, (B-1) nitrogen containing ester of a carboxy-containing interpolymer and/or (B-2) an acrylate polymerization product of an acrylate ester. The rejection states that (A) and (B-2) encompass component (A) of the instant claims. The rejection also states that Tipton et al allows the addition of conventional additives. The rejection states that the conventional additives encompass Applicants' components (C), (D), and (E).

Applicants claims are directed to lubricating compositions comprising at least about 30% by weight of at least one mineral oil, having a kinematic viscosity of less than about 8 cSt at 100°C, (A) from about 15% to about 40% by weight of at least one polymer, and (B) up to about 30% by weight of at least one fluidizing agent, provided that when the fluidizing agent is a poly α -olefin having a kinematic viscosity from about 2 to about 30 cSt at 100°C, then the poly α -olefin is present in an amount up to about 12% by weight, wherein the lubricating composition has a shear loss of less than about 15% in the 20 hour taper bearing shear test. The present combination of components provides good low and high temperature properties especially when used in combination with one or more mineral oils. In one aspect, the compositions provide improved oxidation resistance. The taper bearing shear loss test is a severe shearing test.

Tipton et al does not define shear stability by any given test. Tipton fails to establish the type of testing used to determine the shear stability of his formulations. Shear stability may be determined by a number of different tests with different severities of shearing. Applicants' claims are directed to lubricating compositions which provide a specific value in one of the most severe shear stability test, namely the taper bearing test. Tipton et al contains no disclosure to the degree of shear stability of the lubricating compositions. Further, there is no teaching in Tipton et al which would lead a skilled person to the specific

combination of additive required by Applicants's claims. Applicants have discovered a balance of additives which provide good shear stability in the most severe test and also provide good high and low temperature viscometrics.

Tipton et al does not teach or suggest the levels of the additives required in Applicants' claims. Tipton contains no teachings which would provide guidance to a skilled person to determine the levels of additives needed to provide the claimed shear stability. The Examples of Tipton et al fail to provide the required levels of polymer (A). Tipton et al Examples B and C are automatic transmission fluids. Tipton et al contains no teaching to the base fluids used in preparing the formulation. Applicants claims require that the oil of lubricating viscosity has a specific viscosity, e. g. less than about 8 cSt at 100°C. This type of oil of lubricating viscosity is thinner than most oils used in lubricants, such as gear oils. To provide the proper viscometrics, more polymer is needed. The higher level of polymer adversely affects the low temperature properties and the shear stability or the lubricating composition. Tipton et al Examples D-F use a lower viscosity oil (100 N mineral oil) but the level of polyisobutylene is much lower (4.24, 6.52, and 4.89) than the required amounts of Applicants' claims (from about 15% to about 40% by weight). Tipton et al fails to teach or suggest an additive combination which can provide the proper viscosity using a lower viscosity oil o f lubricating viscosity, e.g. less than about 8 cSt.

Since Tipton et al fails to provide guidance to a skilled person which would motivate them to alter the lubricants of Tipton et al to make the lubricating compositions of Applicants' claims, Applicants submit that Tipton et al does not render obvious their claims. Applicants request withdrawal of the rejection and allowance of the claims.

Accordingly, applicants request withdrawal of the rejection and allowance of the claims. In the event any issues remain in the prosecution of this application, Applicants request the Examiner call the undersigned attorney to expedite allowance of the claims. If any fees are required for the filing of these papers, Applicants request the Commissioner to charge those fees to deposit account #12-2275.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, P.L.L.

By William C. Tritt

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